MASSACHUSETTS FARM BUREAU FEDERATION, INC.

"The Voice of Agriculture"

Address: 249 Lakeside Ave, Marlborough, MA 01752-4503 • Phone (508) 481-4766 • Fax (508) 481-4768
www.MFBF.net • info@mfbf.net

May 24, 2022

Dear Conference Committee Members,

The Massachusetts Farm Bureau Federation (MFBF) is the largest farming organization in the Commonwealth with approximately 6,000 member families. As you begin your discussions to reconcile H. 4515 and S. 2842, MFBF is ***strongly recommending that you reconsider*** the portions of **S. 2842** that deal with wood energy for heating and combined heat and power (CHP). Of particular concern are the provisions which remove these technologies as eligible for the Massachusetts Renewable Portfolio Standard (RPS), Massachusetts Alternative Portfolio Standard for thermal technologies (APS), and for all Massachusetts Clean Energy Center (Mass CEC) programing including the wood stove changeout program run by Mass CEC in partnership with the Massachusetts Department of Environmental Protection.

While the predominant optics are that wood energy is dirty, the reality is very different. Current technology has the ability to reduce emissions from wood consumption to only a fraction of what it has been in the past. Emissions from such systems are much lower than those associated with fossil fuel. What's more, production of waste wood is integrated with existing forestry land uses and does not require the dedicated acreage of solar.

Energy costs are a significant concern for many farmers. Heat and electricity produced through solar are often not available, particularly in rural areas. Fossil fuels are prone to large price fluctuations which are difficult when running a small and medium-sized business. Many farms are deeply concerned about the prospect of what heating costs will be in the coming winter. Wood waste is a locally based source of fuel which is not subject to supply chain disruptions or the associated price fluctuations. Additionally, locally produced wood waste provides income and jobs in rural areas.

Much has been discussed in recent months about the need to incentivize the movement of our economy away from fossil fuels towards electrification. With electric prices more than twice the national average, switching to electric-based heating for largescale agricultural applications is not always cost effective or prudent. With largescale electrification, it is likely that these prices will continue to rise for years to come. Already, Massachusetts residents experience an average increase in retail electricity prices of 3% per year. Also, with most of our MFBF members living in rural areas which are lacking in three phase power infrastructure; utility electrification for heat or process needs is not always practical. Currently the regulated utilities have policies which put the burden of electrical infrastructure upgrades onto the end user, meaning that our farm families have to shoulder the costs of three phase power line and substation upgrades. A new three phase power line can cost $1 million per mile or more. Our members simply cannot afford these upgrades.

Several municipalities, regional school districts, and even state facilities are also using Massachusetts portfolio standard eligible wood energy systems to heat their public buildings. In fact, there are over 200 such systems statewide. These public facilities are also saving the taxpayers of Massachusetts hundreds of thousands of

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public dollars as a result of the switch to wood heat, largely thanks to the RPS and APS' inclusion of wood heating as a renewable energy source since 2003 and 2014 respectively.

In conclusion, we urge the Conference Committee ***not to endorse*** the sections of S. 2842 pertaining to efficient wood heating and CHP and to remove these sections from your final legislation.

Please never hesitate to contact me with any questions. Thank you for your time and consideration.

Respectfully Submitted,

T. Nicolas John
Director of Government & Public Affairs
Massachusetts Farm Bureau Federation

GOOD WOOD COALITION

May 20, 2022

Rep/Sen
Massachusetts State House
24 Beacon St
Boston, MA 02133

Dear Rep/Sen:

The **Good Wood Coalition** is a group of businesses, farms, nonprofit organizations, renewable energy groups, and forest products companies who support the high-efficiency thermal use of wood (which is itself strongly supported by science as an effective decarbonization measure). As you begin your discussions to reconcile H.4515 and S.2842, our coalition is urging you to reconsider the portion of S.2842 that deals with modern wood heat and **reach a compromise that aligns with climate science and results in reductions of carbon emissions.**

We heard in public comments from senators that the biomass portions of the bill were needed to prevent the proposed Springfield biomass power plant from being built. In fact, the Springfield plant is dead, its permits were rescinded, and the RPS regulations (both current and proposed) do not permit new biomass power plants to become eligible for the RPS – in Springfield or anywhere else in Massachusetts.

Our coalition does not object to codifying the current regulatory prohibition on biomass power plants. But the bill goes well beyond that, removing wood heat from MassCEC's oversight and removing wood from the Alternative Portfolio Standard, the Commonwealth's renewable heating program. These choices are **not** supported by climate science, and they will make reaching the Commonwealth's climate change goals much harder. At a time when we're desperately trying to reduce carbon emissions, we should take an "all of the above" approach to achieving these difficult goals, and not remove any arrows from our quiver.

The fact that modern wood heat is a significant decarbonizer is conclusively proven, both in the Commonwealth's commissioned ***Manomet*** study and in follow-on **peer-reviewed research** published in prestigious scientific journals. The evidence is so strong that the leading anti-wood energy group in Massachusetts will not mention or discuss the carbon impact of modern wood heat – because **their own carbon modeling** tells them that it is a significant decarbonizer. MassCEC's *GoClean* residential heating website shows that **modern wood heating actually emits *less* net carbon than air-source heat pumps using today's grid electricity**, which is created using mostly fossil fuels.

Modern wood heat is also attacked on air pollution grounds – particularly, fine particulate matter (PM 2.5). Opponents will cite studies including hundreds of thousands of fireplaces and old wood stoves to attack the small number of ultra-clean modern wood heating appliances eligible in the APS. These pellet and chip boilers are extremely efficient and emit 99% less particulate matter

than an older wood stove per unit of heat generated. A UMass Amherst study found that pellet boilers generally had better emissions than the oil boilers they replaced, and their emissions were less toxic to human health.

Adding an emissions control device such as an electrostatic precipitator (ESP) can remove 98-99% of the remaining particulate matter, making them super-clean. ESPs can add 10% or more to the cost of the system, however. We have called for incentivizing the installation of these devices and are proposing such an incentive in our proposed compromise, as you'll see.

As for forest effects, virtually all the fuel used in APS systems today comes from sawmill residues or non-forest-derived residues, such as utility corridor trimming. As a result, there is virtually no forest impact, and in fact the carbon profile of sawmill residues – wood cut for another purpose, with residues destined to rot and release their carbon anyway – is so good that even anti-wood energy groups do not oppose their use.

Switching everyone over to electric heat and electric transportation will require massive grid upgrades, particularly in rural areas, where three-phase power is rare. Upgrading from single-phase to three-phase power can cost **$1 million per mile**. Utilities are happy to make these upgrades, since they are guaranteed a profit margin on the installation, and can charge it all off to ratepayers, driving the price of electricity ever higher. If we instead can rely on modern wood heating in rural areas, some of these upgrades may not be necessary, keeping the cost of electricity down.

At a time of all-time record fossil fuel prices (including home heating oil), **modern wood heating systems offer extremely inexpensive fuel.** This helps residents and businesses, particularly those in rural areas, save significant money while <u>also</u> reducing their carbon emissions. Since the fuel is locally produced, all funds spent on pellets or chips stays in the local economy, helping support jobs in rural Massachusetts and encouraging forest landowners to keep their forest as forest instead of selling for development. Our own economic analysis shows nearly $15 million dollars in added economic value in rural Massachusetts each year from the modern wood heating industry, despite there being less than 100 systems currently in the APS. With outrageously high fossil fuel prices, modern wood heating is poised for growth in rural areas where oil and propane can be the only options – if the financial benefits from the APS program continue.

We've seen farms increasingly using modern wood heat to expand their shoulder season growing in greenhouses and high tunnels. Removing wood from the APS would hurt farms looking to make this switch. Their other options are generally propane or oil, both of which are now hugely expensive. The likely end result is less locally-grown healthy food.

One large facility using modern wood heat needs to replace its boiler, and if wood is removed from the APS, they may choose to go back to oil instead – an outcome that no one worried about climate change would support.

Modern wood heating systems are extremely sophisticated – only the best state-of-the-art systems are permitted in the APS. If they are removed from the APS, people will continue to burn wood, as it is the cheapest heating fuel, but they will do it in much less efficient cheaper wood systems. Modern wood heat reduces carbon emissions, is super-clean, and very efficient. It's wood heat done right, which is exactly why we <u>should</u> be incentivizing it.

As you can see, the negative effects of removing wood from the APS are substantial and most likely would result in **increased** carbon emissions as people go back to fossil fuels for the 20- or 30-year life of their new heating system or switch to cheaper, less-efficient wood systems.

The Senate bill also removes wood heat from MassCEC's oversight. Besides ending any installation rebates for modern wood heating systems, this change would also permanently kill the wood stove changeout program run by MassCEC in partnership with DEP, which reduces air pollution with modern clean-burning stoves, and also reduces wood use because they are 30% more efficient – reducing overall carbon emissions and saving users 30% on their winter heating bills. With special incentives, low-income residents can get a free new stove and save 30% on heating costs, making this an extremely effective anti-poverty program for rural Massachusetts. This program should be resurrected and expanded because it is such a win on many levels for the Commonwealth. If the Senate bill passes as is, this program would not be possible.

As indicated earlier, our coalition proposes a compromise –removing wood from the RPS (which essentially just codifies the existing regulatory ban on biomass power plants), with the exception of wood systems that do not combust wood, such as biochar pyrolysis or gasification systems. This would permanently remove biomass power plants from eligibility for the RPS, and thus prevent any construction of any new plants anywhere in the Commonwealth (and prevent out-of-state plants from qualifying for RECs). Our compromise would retain modern wood heat in the APS because the science strongly supports it, and there would be a small incentive to install ESPs or other emissions control devices on APS systems, which should result in new and existing APS systems installing them. Wood heat would also remain part of MassCEC's mission, allowing wood stove changeout programs to continue.

We have proposed some amending language to the Senate bill reflecting this compromise. It is attached with this letter, and we urge you to adopt it.

Should you have any questions, please contact lobbyist Dan Bosley at 413-884-4100 or dan.bosley@danbosley.com, or Chris Egan, Executive Director of the Massachusetts Forest Alliance at 617-645-1191 or cegan@massforestalliance.org.

Thank you for your consideration.

Sincerely,

Massachusetts Forest Alliance Marlborough, MA	**Northeast Hearth, Patio & Barbecue Association** Sudbury, MA	**Massachusetts Farm Bureau Federation** Marlborough, MA

Ruffed Grouse Society/ American Woodcock Society Ware, MA	**Cooley Dickinson Health Care** Northampton, MA	**Massachusetts Tree Farm Committee** Hawley, MA
Northern Tree Service Palmer, MA	**Mayer Tree Service** Essex, MA	**Sandri Energy** Greenfield, MA
Caluwe Heat & Power Solutions Burlington, MA	**TTC Energy** Windsor, MA	**D.H. Smith & Sons** Marshfield, MA
Hull Forest Products Russell, MA	**Heyes Forest Products** Orange, MA	**Lashway Lumber** Williamstown, MA
Hampshire Power Easthampton, MA	**Pirner Logging & Land Clearing** Hubbardston, MA	**Ponders Hollow** Westfield, MA
Roberts Bros. Lumber Co. Ashfield, MA	**Roberts Energy Renewables** Ashfield, MA	**Eastern Biomass** N. Oxford, MA
Rocky Mountain Wood Wilbraham, MA	**Central Mass Tree** Winchendon, MA	**New Day Energy** Kingston, MA

Anderson Timber Harvesting Westminster, MA	**T. Jepson & Son** Spencer, MA	**Grossi Forest Products** Fiskdale, MA
Berkshire East Mountain Resort Charlemont, MA	**Catamount Mountain Resort** Egremont, MA	**Western Earthworks** Florence, MA
Barry Equipment Webster, MA	**Land Stewardship, Inc.** Turners Falls, MA	**Atlantic Golf & Turf** Turners Falls, MA
Brewmasters Brewing Services Williamsburg, MA	**Saint Benedict Center** Harvard, MA	**Elevated Design Inc.** Quincy, MA
Holiday Brook Farm Dalton, MA	**Simple Gifts Farm** Amherst, MA	**Flat Rock Farm** Chesterfield, MA
Morning Dew Farm Worthington, MA	**Ledgeline Farm** Goshen, MA	**Crabapple Farm** Chesterfield, MA
Handy Lane Farm Colrain, MA	**Stone Bridge Farm** Chesterfield, MA	**Dexter Farm** Hubbardston, MA
Winter Rock Farm Chesterfield, MA	**Red Shirt Farm** Lanesborough, MA	**Bofat Hill Farm** Chesterfield, MA
Berniche Blueberry Farm Chesterfield, MA	**Dead Branch Farm** Chesterfield, MA	**Crystal Rock Farm** Oakham, MA
Apple Meadow Farm Ashby, MA	**Hunt Road Berry Farm** W. Brookfield, MA	**EcoEarth Recycling** Winchendon, MA
John H. Conkey & Sons Logging Belchertown, MA	**Dylan Field Logging** Northfield, MA	**Wood Energy Recyclers** Princeton, MA
Wagner Wood Amherst, MA	**Hardwick Kilns** Hardwick, MA	**Renewable Heating Solutions** Chesterfield, MA
Quercus Consulting West Haven, MA	**Strate Landscaping** Williamsburg, MA	**Massachusetts Energy Systems** N. Oxford, MA
Berkshire Ed. & Correction Svcs Pittsfield, MA	**Farm Family Insurance** Great Barrington, MA	

American Wood Council Leesburg, VA	American Forest Foundation **American Forest Foundation** Washington, DC	AF&PA?
Biomass Thermal Energy Council Washington, DC	**Alliance for Green Heat** Takoma Park, MD	**Lignetics** Louisville, CO
Pellet Fuels Institute Seattle, WA	**Maine Energy Systems** Bethel, ME	**Lyme Green Heat** Lyme, NH
Froling Energy Keene, NH	**Tarm Biomass** Orford, NH	**Maine Pellet Fuels Association** Portland, ME
Renewable Energy Vermont Montpelier, VT	**Aroostook Partnership** Caribou, ME	**Terry Tree Service** Henrietta, NY
Wisewood Energy Portland, OR	**Vermont Plank Flooring** Brattleboro, VT	**Long View Forest** Westminster, VT
Riverdale Farm & Forest Delhi, NY	**Maryland Forests Association** Linkwood, MD	

Economic Impact of Modern Wood Heat
Massachusetts, 2020

Economic and Environmental Benefits

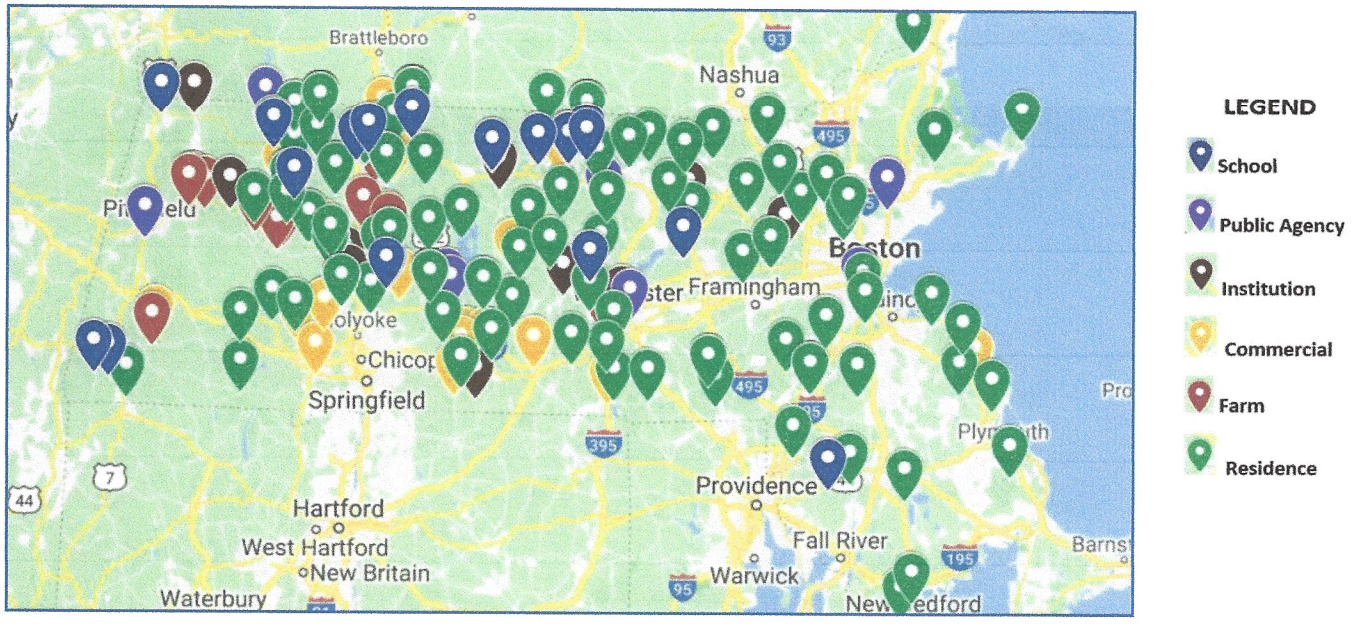
2.6 million gallons of heating oil displaced
28,600 tons CO_2 equivalent reduced emissions
***$4.0 million saved* in heating costs vs. heating oil**
***$3.5 million direct spending* on local wood pellets and chips**
***$14.2 million in total economic benefit to* Massachusetts**

Proven Reliability

In 2020 there were + 224 modern wood heating systems. Applications of this automatic pellet and chip technology include homes, farms, schools and commercial settings.

See interactive map of the + 224 installed modern wood heat systems in Massachusetts at www.masswoodheat.org

The map and link provide detailed information on each site, coded as follows:



By using sustainably sourced wood chips and wood pellets instead of fossil fuels for heating Massachusetts benefits economically and environmentally.

Proven: In 2020, within the Commonwealth there were 224 modern wood heating systems (Pellet & Chip) heating homes, schools, farms, hospitals, municipal buildings, and businesses.

Local: These facilities consumed an estimated 5,500 tons of pellets produced in the region, and over 26,600 tons of green and dry wood chips produced in MA.

Renewable: Nearly all these facilities burned imported heating oil in the past. By switching to modern wood heat, they reduced oil use by the equivalent of 2.6 million gallons.

$

Cost Effective: By switching fuels, these facilities saved about $4.0 million in heating costs, based on heating oil at $2.75/gallon.

$$

Beneficial: Money spent on wood chips and pellets pumped $3.5 million into the local economy.

$$$

Powerful: Direct spending on wood fuels, combined with retained wealth through heat cost savings and jobs and taxes associated with this sector generated an estimated $14.2 million in economic activity in Massachusetts.

Carbon Better: Heating with wood releases exactly the same CO^2 as allowing the chips to decompose. Using this renewable fuel from sustainable sources reduced overall GHG equivalent emissions by an estimated 28,600 tons.

Analysis by Massachusetts Statewide Wood Energy Team
Data and calculations available upon request

Key Assumptions in Analysis

Moisture Content	Bone dry wood at 0% moisture content = 4.9 MWH per ton energy content; Chips at 45% moisture content = 2.9 MWH/ton; dry chips at 30% moisture content = 3.4 MWH/ton; pellets at 4% moisture content = 4.7 MWH/ton.
Fuel Cost	Green chips delivered price/ton = $50/ton; dry chips = $125/ton; bulk pellets delivered price/ton = $250/ton average
Energy Equivalents	1 MWH = 3,412,000 BTU; 1 Gallon #2 Heating Oil = 138,500 BTU
Savings Calculation	Heat cost savings vs. oil calculated by using heating oil at $2.75/gallon (MA DOER 2018-2020 average)
Economic Impact Calculation	Total Economic Impact = ($ spent on fuel + heat cost savings) x multiplier of 1.76 (multiplier per Economic Impact of Maine's Forest Products Industry, 2014 and 2016; June 30, 2016; James Anderson III and Mindy Crandall PhD; School of Forest Resources, University of Maine

www.masswoodheat.org

Wood Energy Amendment to S.2842

The bill is amended as follows:

SECTION 1. In Section 2 of the bill, adding the words "wood, if used in high-efficiency thermal systems," in line 34 after the words "nuclear fusion".

SECTION 2. In Section 4 of the bill, adding the words "or wood, if used in high-efficiency thermal systems," in line 62 after the words "food wastes".

SECTION 3. Striking Section 7 of the bill in its entirety and replacing it with the following:

> Said Section 9 of said chapter 23J is hereby amended by inserting in line 118, after the words "geothermal heating and cooling projects," the following words:
>
> including networked geothermal and deep geothermal energy,

SECTION 4. Striking Sections 22 through 30 of the bill in their entirety and replacing them with:

> SECTION 22. Section 11F of Chapter 25A of the general laws, as so appearing in the 2018 official edition, is hereby amended by striking section 11F (b) (8) and replacing it with this language:
>
> (8) low emission advanced biomass power conversion technologies using fuels such as by-products or waste from agricultural crops, food or animals, energy crops, biogas, liquid biofuel including but not limited to biodiesel, organic refuse-derived fuel, algae, or wood, provided, however that only systems which do not combust wood such as biochar pyrolysis and gasification systems shall be eligible; or
>
> SECTION 23. Said Section 11F of Chapter 25A is hereby further amended by striking the sentence following section 11F (b) (9) beginning with "The department may also consider" in its entirety and replacing it with this language:
>
> The department shall regulate wood biochar systems as biogas systems, as they do not combust wood and produce a biogas that is burned for electricity generation.
>
> SECTION 24. Said Section 11F of Chapter 25A is hereby further amended by striking Section 11F (c) (7) and replacing it with this language:
>
> (7) low emission advanced biomass power conversion technologies using fuels such as by-products or waste from agricultural crops, food or animals, energy crops, biogas, liquid biofuel including but not limited to biodiesel, organic refuse-derived fuel, algae, or wood, provided, however that only systems which do not combust wood such as biochar pyrolysis and gasification systems shall be eligible; or

SECTION 25. Said Section 11F of Chapter 25A is hereby further amended by striking Section 11F (d) (8) and replacing it with this language:

(8) low emission advanced biomass power conversion technologies using fuels such as by-products or waste from agricultural crops, food or animals, energy crops, biogas, liquid biofuel including but not limited to biodiesel, organic refuse-derived fuel, algae, or wood, provided, however that only systems which do not combust wood such as biochar pyrolysis and gasification systems shall be eligible; or

SECTION 26. Section 11F 1/2 of Chapter 25A of the general laws, as so appearing in the 2018 official edition, is hereby amended by adding the following to the end of Section 11F 1/2 (e):

The department shall provide that for wood systems that install an electrostatic precipitator or other emissions control device, an alternative energy credit shall be earned for less than 3,412,000 British thermal units of net useful thermal energy so as to improve air quality; provided, however that a credit shall not be earned for less than 1,706,000 British thermal units of net useful thermal energy.

SECTION 5. Striking Section 82 and replacing it with this language:

SECTION 82. Sections 22 to 25, inclusive, shall take effect upon their passage and shall not apply to any biomass facility qualified by the department of energy resources as a renewable energy generating source pursuant to section 11F of chapter 25A of the General Laws as of January 1, 2022.

FACT SHEET ON THE EFFECT OF THESE LANGUAGE CHANGES

1. This amendment removes wood combustion as eligible for the RPS. This would prevent any utility-scale biomass power plants from becoming eligible for the RPS, in-state or out. Without REC income, these plants are not financially feasible, meaning none would be built in Massachusetts. Existing out-of-state plants could not qualify and receive REC income. High-efficiency combined-heat-and-power (CHP) systems would also become ineligible for the RPS (despite the Commonwealth's own research that these systems are significant decarbonizers). Wood combustion to create electricity would end, except for the two current CHP systems that would be grandfathered.

2. Biochar systems do **not** combust wood, but instead heat it in a zero- or low-oxygen environment in processes called pyrolysis or gasification. The only thing burned is a biogas, virtually identical to what is produced in an anaerobic digester, and in fact the biogas is often burned in the exact same generators used to create electricity in anaerobic digester systems. Because these high-efficiency systems do not have the same air emissions impact as burning wood and are virtually identical to anaerobic digesters in air impacts, **they would remain eligible in the RPS.** Biochar retains 70-80% of the carbon in the wood, and if used in agriculture, it will lock that carbon out of the atmosphere for up to 4,000 years. Using sawmill residues in biochar systems comes close to being a carbon negative source of electricity.

3. The APS is amended to offer an incentive to modern wood heating systems that install emissions control devices. These small (mostly residential) wood pellet boilers and wood chip boilers are already substantially cleaner than wood stoves (a UMass Amherst research study shows generally better than installed oil boilers in emissions – and peer-reviewed studies show that wood emissions are less toxic than oil emissions). Adding an emissions control device such as an electrostatic precipitator removes 98-99% of the remaining particulate emissions. These emission control devices are expensive - adding 10% or more to the cost of installing the entire system - so adding a small credit multiplier (one additional credit per credit earned, compared to the **five** credits per credit earned multiplier for heat pumps that DOER currently offers) would incentivize and financially allow for the installation of these devices, resulting in even cleaner air. The objection to wood in S.2197 that was incorporated into this bill is entirely around air pollution impacts, and this amendment language addresses that concern in the APS. Again, **the decarbonization effect of these wood systems is solidly proven by peer-reviewed science, so they should remain eligible in the APS.**

4. Should the bill pass **without** this amendment, these would be some of the effects:
    - One biomass CHP system in the RPS, needing to replace its boiler, could no longer qualify for the **APS** with their new system if this bill passed, and they could switch to oil as a result – an outcome that no climate advocate would support.
    - By removing wood heat from MassCEC's purview, future wood stove changeout programs that they have led (working collaboratively with DEP) would be banned. These programs replace old stoves with new ones that reduce particulate emissions by more than 90 percent and use 30% less wood to generate the same amount of heat because they are so much more efficient. This program greatly aided the rural poor, because they could exchange their stove essentially for free, and they would end up spending 30% less annually heating their homes. Effects on the rural poor are often overlooked and killing this program would further harm them.

- Farms have been adding modern wood heat systems to heat greenhouses and high tunnels. Farms who were considering installing modern wood heat systems would either no longer try to grow in the shoulder seasons or would use oil and propane instead if modern wood heat is eliminated from the APS (if fossil fuel prices came down). Modern wood heat (funded with MDAR and USDA REAP grants) is a real benefit to struggling local farms, and helps them to grow more local, healthy food distributed in the Commonwealth's Healthy Incentive Program (HIP) to low-income residents.
- Commercial users in rural areas would no longer be incentivized to switch from oil to modern wood heat, resulting in larger net carbon emissions and more toxic air emissions. For larger businesses, modern wood heat is far cheaper to install than air-source heat pumps, and the fuel – wood vs. electricity – is also substantially cheaper. Modern wood heat would also help avoid ruinously expensive ($1 million/mile) rural grid upgrades to modern three-phase power, which drives up electric rates for all ratepayers.
- Residential users would no longer be incentivized to switch to clean, efficient modern wood heat. They would continue to use oil or much dirtier outdoor wood boilers, resulting in higher emissions of particulates.

The number of modern wood heat systems in the APS is small, because they became eligible for the APS only a few years ago, and shortly thereafter MassCEC ended installation rebates and the Alternative Energy Credit (AEC) market was crashed by oversupply from natural gas CHP. The value of credits plummeted – to as little as 50 cents per credit last year – and as a result some modern wood heat users didn't think the paperwork hassle was worth the $50 a year they would earn from credits. As the AEC market recovers with changes being made by DOER, the value of credits will increase, and they will once again be an incentive to switch (and for existing modern wood heating systems not in the APS to join). Combined with high fossil fuel prices, the modern wood heat market, while still remaining small, will rebound going forward and help the Commonwealth reach its climate change goals, especially in rural areas.

Emissions control devices can lower particulate emissions down close to natural gas levels, and the decarbonization impact of modern wood heat is proven by science – just see MassCEC's **GoClean** website for the net carbon impacts on a residential level, or see the Commonwealth's own ***Manomet*** study, which came down heavily in favor of the thermal use of wood. At a time when we are desperate to reduce carbon emissions, we cannot let the perfect be the enemy of the good – we need an "all of the above" approach.

Eliminating utility-scale biomass power plants is exclusively what drives proponents of the biomass portions of this bill, as demonstrated by public statements to that effect by Senators. But also eliminating small-scale modern wood heat systems would set back the state's climate change efforts and lead to worse outcomes. It simply doesn't make sense.